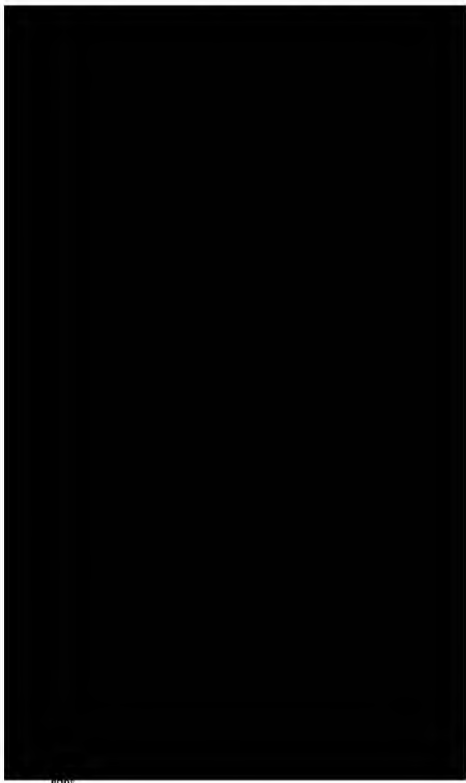


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COUNTRY: CHINA (CH); SWITZERLAND (SW); INDONESIA (ID);
JAPAN (JA)

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SUBJECT: [REDACTED] /DEFENSE SCIENCE,
TECHNOLOGY, AND INDUSTRY REPORT, 16-31
OCTOBER 1991

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EVALUATED INTELLIGENCE. REPORT IS
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DEPARTMENT OF DEFENSE

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REQS:

SOURCE:

SUMMARY: ECONOMISTS NOT SATISFIED WITH REFORMS. MEDIA
HIGHLIGHTS TECHNOLOGY, DOWNPLAYS IDEOLOGY. "QIGONG"
PROMOTES COMBAT READINESS. SRP SENSITIVE TO
ENVIRONMENTAL POLLUTION. PLA NAVY ADVISED TO BECOME
SMALLER.

TEXT: 1. INTRODUCTION

A. THIS REPORT CONTAINS SUMMARIES OF PRC MEDIA
REPORTS ON DEVELOPMENTS IN THE DEFENSE SCIENCE,
TECHNOLOGY, AND INDUSTRY (DSTI) SECTOR FROM 16-31 OCT
91.

B. TABLE OF CONTENTS --

1. INTRODUCTION
2. DSTI ORGANIZATION
3. DSTI FINANCE AND MANAGEMENT
4. SIGNIFICANT DEFENSE R&D ACHIEVEMENTS
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6. SHIPBUILDING INDUSTRY
7. MINISTRY OF MACHINE BUILDING/ELECTRONICS
INDUSTRY

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B. STATE S&T COMMISSION (SSTC) "TORCH PROGRAM OFFICE" REPORTS RAPID PROGRESS IN RECENTLY ESTABLISHED HIGH-TECH DZ'S (CD, 22 AND 23 OCT). THE SSTC OFFICE CLAIMS THE BEIJING'S "3-LEGGED POLICY" OF ESTABLISHING FIVE SPECIAL ECONOMIC ZONES (SEZ), 14 COASTAL ECONOMIC AND TECHNOLOGICAL DZ'S, AND 27 STATE-LEVEL HIGH-TECH INDUSTRIAL DZ'S, IS HAVING THE DESIRED AFFECT OF PROMOTING ECONOMIC DEVELOPMENT. THE BEIJING HIGH-TECH DZ HAS ACHIEVED A 40 PERCENT ANNUAL GROWTH IN TOTAL OUTPUT SINCE IT WAS FOUNDED IN 1988. THE EIGHT HIGH-TECH INDUSTRIAL DZ'S IN EAST CHINA ACHIEVED AN OVERALL TOTAL OUTPUT VALUE OF OVER 20 BILLION YUAN IN 1990. SSTC HAS DETECTED SOME PROBLEMS IN ZONE DEVELOPMENT DUE

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TO LACK OF INVESTMENT FUNDS, SHORTAGES OF TALENTED SST PERSONNEL, AND EXCESSIVE RED TAPE. HOWEVER, THE ZONES HAVE ENCOURAGED FOREIGN INVESTMENT AND INCREASED HIGH-TECH EXPORTS WHILE IMPROVING GENERAL ECONOMIC EFFICIENCY. (NOTE -- SEE ALSO 1-15 OCT 91 DSTI REPORT.)

C. SHENYANG DONGBEI MICROELECTRONICS RESEARCH INSTITUTE (RI) SETS UP LARGE-SCALE INTEGRATED CIRCUIT (LSIC) TEST BASE (NEW CHINA NEWS AGENCY - NCNA, 26 OCT). THE RI SET UP THIS PILOT RESEARCH AND DEVELOPMENT (R&D) CENTER TO DEVELOP A PRODUCTION LINE FOR 2.5 MICRON CHIPS; AND TO CONDUCT EXTENSIVE R&D IN 1.5 MICRON LSIC'S. THE 44.5 MILLION YUAN PROJECT POSSESSES CHINA'S MOST ADVANCED FACILITIES, INCLUDING HIGH-PURITY WATER AND SUPERPURE AERODYNAMIC STATIONS. THE BASE PASSED STATE-LEVEL TECHNICAL EVALUATION TESTS ON 26 SEP AND WENT INTO FULL OPERATION.

3. DSTI FINANCE AND MANAGEMENT

A. CHINA'S ECONOMIC EXPERTS NOT SATISFIED WITH REFORM MEASURES ENACTED AT HIGH-LEVEL COMMUNIST PARTY MEETING (CD, 16, 17, 21, 26 & 28 OCT; SOUTH CHINA MORNING POST - SCMP, 22 OCT). RESEARCHERS FROM THE CHINESE ACADEMY OF SOCIAL SCIENCES HAVE SUGGESTED THAT THE 12 REFORM MEASURES ADOPTED BY PARTY LEADERS IN SEP WILL NOT RESCUE CHINA'S FAILING STATE-RUN ENTERPRISES UNLESS THEY ARE ALLOWED MANAGEMENT AUTONOMY, OPEN TO THE OUTSIDE WORLD, AND CARRY OUT VIGOROUS TECHNICAL TRANSFORMATION. THEY HAVE CRITICISED CURRENT ENTERPRISE MANAGERS FOR CONTINUING TO MEASURE SUCCESS OF THEIR FACTORIES BASED ON TOTAL PRODUCTION OUTPUT RATHER THAN ON EFFICIENCY AND PROFITABILITY. THEY NOTE THAT INDUSTRIAL LEADERS HAVE PROUDLY POINTED TO ROBUST PRODUCTION GROWTH IN THE 3RD QUARTER 1991 AS AN INDICATOR THAT CHINA IS RECOVERING FROM THE AUSTERITY PROGRAM BEGUN IN 1988. PRODUCTION GROWTH DID INCREASE 13.4 PERCENT IN JUL, 14.6 PERCENT IN AUG, AND 14.9 PERCENT IN SEP; HOWEVER, UNSOLD INVENTORIES INCREASED 17 PERCENT DURING THE PERIOD AND WERE VALUED AT 133 BILLION YUAN BY THE END OF JUL. THE STATE COUNCIL DESIGNATED 1991 AS THE "YEAR OF EFFICIENCY, QUALITY, AND VARIETY"; YET, THE YEAR IS ALMOST OVER AND ENTERPRISE MANAGERS ARE STILL STRESSING HIGH PRODUCTION AND IGNORING THE NEED FOR ECONOMIC EFFICIENCY. THE 36 PERCENT OF STATE-RUN FACTORIES LOSING MONEY, AND THE 33 PERCENT ONLY BREAKING EVEN WILL NOT RECOVER UNTIL THEIR MANAGERS BEGIN EMPHASIZING QUALITY OVER QUANTITY. PARTY LEADER ((JIANG)) ZEMIN ALSO POINTED TO THE NEED FOR STATE-RUN INDUSTRY TO ACCELERATE MANAGEMENT REFORM AND SEEK FOREIGN TECHNOLOGICAL ASSISTANCE WHILE CONDUCTING AN INSPECTION OF GOVERNMENT ENTERPRISES IN ZHEJIANG PROVINCE. THE STATE PLANNING COMMISSION (SPC) HAS

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INITIATED SEVERAL STEPS TO COME TO GRIP WITH THE GROWING NUMBER OF LOSS-MAKING STATE ENTERPRISES. IT HAS ASKED PROVINCIAL GOVERNMENTS TO SELECT A MINIMUM OF 12 INEFFICIENT ENTERPRISES TO BE CLOSED DOWN OR ALMAGAMATED WITH EFFICIENT UNITS DURING 1991. THE LOSS-MAKING FIRMS WILL NOT BE DECLARED BANKRUPT AND WORKERS WILL BE GUARANTEED 70 PERCENT OF THEIR WAGES UNTIL NEW WORK IS FOUND FOR THEM. THE SPC IS ALSO ENCOURAGING THE FORMATION OF ADDITIONAL ENTERPRISE "CONGLOMERATES" TO ABSORB LESS-EFFICIENT FACTORIES. CHINA ALREADY HAS 55 OF THESE LARGE INDUSTRIAL GROUPS, AND THE SPC WOULD LIKE TO INCREASE THAT NUMBER TO OVER 100 IN THE NEXT FEW YEARS. (NOTE -- SEE ALSO 1-15 OCT 91 DSTI REPORT.)

B. DIRECTOR OF CHINESE ACADEMY OF SCIENCE (CAS) CALLS ON RESEARCH ORGANS TO ENCOURAGE YOUNG SCIENTISTS AND LEARN FROM WEST (S&T DAILY - STD, 16 OCT; CD 18 OCT; SCMP, 25 OCT). PROFESSOR ((ZHOU)) GUANGZHAO, SPEAKING AT CEREMONIES AT THE CHINESE UNIVERSITY OF HONG KONG, URGED CHINA'S MORE THAN 5,000 RI'S TO ENCOURAGE YOUNG SCIENTISTS TO CONTRIBUTE TO CHINA'S S&T ADVANCEMENT. ZHOU POINTED TO THE NEED FOR THESE INTELLECTUALS TO BE PROVIDED WITH ADEQUATE WORK, STUDY, AND LIVING CONDITIONS; AND FOR THEIR TALENTS TO BE DEVELOPED THROUGH A COMPETITIVE SYSTEM. THE CAS DIRECTOR IDENTIFIED THE NEED FOR THE STATE TO PROVIDE THESE RI'S WITH MORE FREEDOM AND FUNDING TO ENCOURAGE THEM TO SEEK GREATER TECHNOLOGICAL ASSISTANCE FROM THE WEST. (NOTE -- SEE ALSO 16-30 SEP 91 DSTI REPORT.)

C. HENAN AND SHAANXI PROVINCES HIGHLIGHT EFFORTS OF THEIR DSTI SECTORS TO PRODUCE CIVILIAN GOODS (ZHENGZHOU RADIO, 20 OCT, PEOPLE'S DAILY - PD, 23 AND 30 OCT). SHAANXI PROVINCE LEADERS CLAIM THAT LOCAL DEFENSE FACTORIES ARE NOW ABLE TO PRODUCE OVER 600 DIFFERENT CIVILIAN COMMODITIES, INCLUDING THE Y-7 AIRCRAFT. THE PERCENTAGE OF TOTAL PRODUCTION DEDICATED TO CIVILIAN GOODS HAS RISEN FROM 31 PERCENT IN 1985 TO 73.8 PERCENT IN 1990. THE PROVINCE HAS SET THE GOAL OF RAISING THAT PERCENTAGE TO 80 BY THE END OF THE 8TH FYP. HENAN PROVINCE NOTED THAT, DURING THE 7TH FYP, ITS DSTI SECTOR HAD INVESTED 200 MILLION YUAN IN CONVERTING MORE THAN 30 MILITARY PRODUCTION LINES TO CIVILIAN PRODUCTS. COMMISSION ON SCIENCE, TECHNOLOGY, AND INDUSTRY FOR NATIONAL DEFENSE (COSTIND) ALSO REPORTED THAT, DURING THE 7TH FYP, THE ENTIRE DSTI SECTOR HAD CARRIED OUT 1,195 MILITARY-TO-CIVILIAN PRODUCTION LINE CONVERSIONS, ADDING 2.1 BILLION YUAN TO THE INDUSTRY'S TOTAL ANNUAL OUTPUT VALUE.

D. BEIJING HOSTS INTERNATIONAL CONFERENCE ON COOPERATION IN PEACEFUL USE OF MILITARY-INDUSTRIAL TECHNOLOGY (STD, 23 OCT; LIBERATION ARMY DAILY - LAD,

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23 AND 28 OCT). THE 4-DAY CONFERENCE WAS SPONSORED BY THE UN CENTER FOR S&T DEVELOPMENT AND COSTIND FROM 22 TO 25 OCT. COSTIND VICE MINISTER, MAJOR GENERAL ((HUALI)) GUOMO (STC - 2037/0948/2875), TOLD THE MORE THAN 100 INTERNATIONAL AND CHINESE DELEGATES THAT CHINA HAD INVESTED OVER 3 BILLION YUAN DURING THE 7TH FYP PERIOD CONVERTING 299 MILITARY COMPLEXES INTO PRODUCERS OF CIVILIAN GOODS. DURING 1990, 65 PERCENT OF DSTI SECTOR PRODUCTION WAS IN CIVILIAN PRODUCTS. COSTIND HAS ENCOUNTERED SOME PROBLEMS IN MAKING FURTHER CONVERSIONS TO CIVILIAN PRODUCTION DUE TO CHINA'S INFLEXIBLE ECONOMIC STRUCTURE, SHORTAGES OF FUNDS, AND INEFFICIENT ENTERPRISE MANAGEMENT. CHINA WAS ANXIOUS TO COOPERATE WITH FOREIGN COUNTRIES TO PRODUCE CIVILIAN AIRCRAFT, SATELLITES, NUCLEAR POWER STATIONS, MARITIME VESSELS, AND APPLIED ELECTRONIC PRODUCTS.

E. CAS SCIENTISTS PREPARE REPORT PROJECTING CHINA'S LONG-TERM DEVELOPMENT, ENTITLED "SURVIVAL AND DEVELOPMENT" (CD, 25 OCT). THE 213-PAGE REPORT QUOTES CAS PRESIDENT, ZHOU GUANGZHAO, AS DESCRIBING CHINA IN A CRUCIAL STAGE IN ITS HISTORY. CHINA'S CONTINUING HIGH POPULATION GROWTH HAS CREATED RESOURCE SHORTAGES AND A DETERIORATING ECOLOGY. THE COUNTRY HAS FEW CHOICES IN ITS MAJOR POLICY DECISIONS AND THERE IS LITTLE ROOM FOR ERROR. CHINA MUST CONTINUE WITH ITS ARDUOUS STRUGGLE TOWARDS MODERNIZATION AND ECONOMIC REFORM WITH MORE EMPHASIS ON S&T AND THE ENVIRONMENT.

F. COMMUNIST PARTY PROPAGANDA OFFICE DIRECTS MEDIA TO PROMOTE S&T ACCOMPLISHMENTS AND CURB LEFTIST INDOCTRINATION (CHINA NEWS SERVICE - CNS, 29 OCT). PARTY SECRETARY JIANG ZEMIN AND OTHER KEY REFORM-ORIENTED LEADERS HAVE DIRECTED RADIO, TV, NEWSPAPERS, AND MAGAZINES TO DEVOTE MORE SPACE TO PROMOTING CHINA'S EFFORTS AT S&T DEVELOPMENT, WHILE PLAYING DOWN ARTICLES ON CLASS STRUGGLE AND POLITICAL RECTITUDE. RECENTLY, PD EDITOR ((GAO)) DI DIRECTED WRITERS TO GIVE HEAVY COVERAGE TO THE SUCCESS OF CHINA'S FIRE BRIGADES IN PUTTING OUT OIL WELL FIRES IN KUWAIT, STRESSING THE FIRE FIGHTERS' USE OF ADVANCED TECHNOLOGIES IN PUTTING OUT THESE FIERCE FIRES. THE MEDIA FREQUENTLY REFERS TO PATRIARCH ((DENG)) XIAOPING'S DESCRIPTION OF S&T AS CHINA'S "PREMIER PRODUCTION FORCE" IN THESE S&T ARTICLES.

4. SIGNIFICANT DEFENSE R&D ACHIEVEMENTS

A. STATE-RUN FACTORY NUMBER 388 AND NUMBER 704 RI DEVELOP WATER TURBINE ELECTROHYDRAULIC SPEED REGULATOR (HUBEI DAILY, 18 OCT). THE TWO ENTERPRISES JOINTLY DEVELOPED THIS REGULATOR WHICH AUTOMATICALLY ADJUSTS THE OPERATION OF HYDROELECTRIC GENERATING UNITS DEPENDING ON

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THE SPEED OF WATER FLOW PASS THE TURBINES. THE DEVICE IS DESIGNED TO IMPROVE GENERATOR EFFICIENCY BY INSURING RATIONAL AND ECONOMICAL OPERATION. THE REGULATOR RECENTLY PASSED STATE-LEVEL TECHNICAL APPRAISAL TESTS AT THE GEZHOUBA POWER PLANT.

B. BEIJING XIAOJUN COMPUTER ENGINEERING DEPARTMENT (DEPT) DEVELOPS CHINESE CHARACTER COMPUTER INTEGRATION SOFTWARE (CD, 20 OCT). THE NEW SOFTWARE INTEGRATES THE COMPUTER FUNCTIONS OF CHINESE CHARACTER PROCESSING, STORAGE, TYPESETTING, AND GRAPHIC PROCESSING; FACILITATING OFFICE AUTOMATION AND DATA MANAGEMENT. THE SOFTWARE PASSED TECHNICAL APPRAISAL TESTS GIVEN BY BEIJING HIGH-TECH INDUSTRIAL DZ ON 19 OCT.

C. CHONGQING UNIVERSITY RI ACHIEVES BREAKTHROUGH IN "INDUSTRIAL COMPUTER FAULT SCANNING IMAGERY TECHNOLOGY" (ICT) (STD, 22 OCT). THE UNIDENTIFIED (UI) RI HAS DEVELOPED AN "ICT FOUR DETECTING-HEAD EXPERIMENTAL SYSTEM", WHICH IS CAPABLE OF ACCURATE AND HIGH-PRECISION MEASUREMENTS OF DEFECTS IN INTERNAL STRUCTURAL PARTS. THE INSTRUMENT WILL THEN DISPLAY THE FAULTS DETECTED GRAPHICALLY ON A VIDEO MONITOR. THE SYSTEM PASSED TECHNICAL APPRAISAL AND ACCEPTANCE TESTS AT THE UNIVERSITY RECENTLY.

D. MINISTRY OF PUBLIC SECURITY (MPS) RI DEVELOPS "CHINA AUTOMATIC FINGERPRINT IDENTIFICATION SYSTEM" (CAFIS) (PEOPLE'S PUBLIC SECURITY NEWS - PPSN, 24 OCT; STD, 24 OCT). THE UI RI DEVELOPED CAFIS AS A KEY PROJECT UNDER THE 7TH FYP. THE SYSTEM CAN SELECT A SPECIFIC SET OF FINGERPRINTS FROM AMONG UP TO 100,000 IN 10 MINUTES. MPS CLAIMS IT WILL GREATLY IMPROVE THE EFFICIENCY OF CRIMINAL INVESTIGATING IN CHINA. THE SYSTEM RECENTLY PASSED STATE TECHNICAL APPRAISAL IN BEIJING. IT HAS ALREADY BEEN ADOPTED BY MANY LOCAL PUBLIC SECURITY BRANCHES THROUGHOUT THE COUNTRY.

E. JIANGSU PROVINCE AUTOMATION RI DEVELOPS MICROCOMPUTER CONVERTER MODULE (CHINA SHIP NEWS - CSN, 25 OCT). THE "CONVERTER MODULE" - "ZHUANHUAN MOKUAI" (STC - 6567/2255/2875/1040) DEVELOPED BY THE RI WAS A KEY PROJECT UNDER THE "TORCH PROGRAM". IT IS DESIGNED FOR USE IN COMPUTER-CONTROLLED AREAS, SUCH AS IN INDUSTRIAL, WEAPONS, AND SURVEY CONTROL, OR IN CONTROLLING METEOROLOGICAL ROBOTS AND SATELLITES. THE NEW DEVELOPMENT WON A GOLD MEDAL AT THE JINZHOU PATENTED TECHNOLOGY AND PRODUCTS TRADE FAIR.

F. CHINA NUCLEAR PHYSICS AND CHEMICAL ENGINEERING RI SEPARATES ENRICHED URANIUM WITH ATOMIC LASER (PD, 27 OCT). THE TIANJIN-BASED RI DEVELOPED THE LASER-SEPARATION TECHNOLOGY AFTER 5 YEARS OF EXPERIMENTATION.

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THE NEW METHOD INVOLVES BOMBARDING NATURAL URANIUM, CONTAINING 0.7 PERCENT U-235, AND PRODUCING ENRICHED URANIUM WITH A U-235 CONTENT OF 3 PERCENT OR HIGHER. THE ENRICHED URANIUM IS REQUIRED FOR USE AS NUCLEAR REACTOR FUEL. THE RI SUCCEEDED IN RETRIEVING ENRICHED URANIUM AT A RATE OF 2 MILLIGRAMS PER HOUR, THUS MEETING DESIGN REQUIREMENTS. THE METHOD CAN ALSO BE USED TO RE-ENRICH DEPLETED URANIUM AND TO PURIFY PLUTONIUM AND MERCURY ISOTOPES. THE NEW METHOD PASSED STATE-LEVEL TECHNICAL APPRAISAL TESTS IN BEIJING ON 26 OCT.

G. CHINA'S FIRST FULLY-AUTOMATED ROBOT ASSEMBLY LINE SET UP IN FOSHAN //GEOCOORDS: 2302N/11307E// HUAYANG ELECTRIC FAN FACTORY (HONG KONG TA KUNG PAO - TKP, 30 OCT). THE FACTORY HAS INSTALLED THREE PRODUCTION LINES OPERATED BY ROBOTS. EACH LINE IS 20 METERS (M) LONG, HAS 14 WORK STATIONS AND IS CONTROLLED BY FIVE ROBOTS. THE ASSEMBLY LINES WERE DEVELOPED BY THE SOUTH CHINA SCIENCE AND ENGINEERING RI. THE STATE "863 PROGRAM" HIGH-TECH PLANNING COMMITTEE CHOSE THE GUANGDONG PROVINCE FACTORY TO TRIAL TEST THE ROBOT ASSEMBLY LINES. THE FIRST ASSEMBLY LINE, WHICH WILL REDUCE MANPOWER REQUIREMENTS BY 60 PERCENT, WILL BEGIN TRIAL OPERATION IN FEB 92.

H. BEIJING GEOTECHNICAL RI AND ZHEJIANG UNIVERSITY DEVELOP GEOTECHNICAL INFORMATION SYSTEM (STD, 30 OCT). THE SYSTEM CAN RAPIDLY RETRIEVE THOUSANDS OF DATA ITEMS AND PRODUCE COMPUTER-AIDED DESIGNS. IT CAN REDUCE THE TIME REQUIRED TO CARRY OUT DATA ANALYSIS FROM UP TO 1 YEAR TO ONLY A FEW DAYS. IT WILL BE VERY HELPFUL TO URBAN PLANNERS, OIL EXPLORATION AND MINING ENGINEERS. THE SYSTEM PASSED TECHNICAL APPRAISAL TESTS IN BEIJING ON 17 OCT.

5. MINISTRY OF AEROSPACE INDUSTRY

A. MASI NUMBER 710 RI DEVELOPS "AEROSPACE VEHICLE INTEGRATED DESIGN AND MANUFACTURING SYSTEM" (AVIDM) (STD, 14 OCT; CHINA AEROSPACE NEWS - CAN, 20 OCT). EXPERTS FROM VARIOUS MASI UNITS AND ACADEMIES HAVE BEEN WORKING AT THE 710 RI TO DEVELOP THE AVIDM FRAMEWORK USING COMPUTER-ASSISTED-DESIGN/COMPUTER-ASSISTED-MANUFACTURE TECHNOLOGIES. THE AVIDM SOFTWARE HAS 168 PROGRAM MODULES AND, WHEN OPERATIONAL, WILL GREATLY REDUCE R&D TIME REQUIRED AND RAISE DESIGN QUALITY OF AEROSPACE SYSTEMS UNDER DEVELOPMENT.

B. CAN PROFILES MASI NUMBER 303 AEROSPACE RI (17 OCT). THE RI WAS FOUNDED IN 1961 AS CHINA'S AIRCRAFT EQUIPMENT R&D CENTER, AND WAS ORIGINALLY CALLED THE PRECISION MACHINERY RI UNDER THE NATIONAL DEFENSE INDUSTRY COMMISSION. KEY R&D PROJECTS UNDERTAKEN BY THE

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RI INCLUDE -- PRECISION AND ULTRA-PRECISION PROCESSING TECHNOLOGY, PRECISION MEASUREMENT TECHNOLOGY, COORDINATE MEASURING MACHINES, WORK PROCESS AUTOMATION TECHNOLOGY, ENVIRONMENTAL TESTING TECHNOLOGY, AND SPECIAL PROCESSING TECHNOLOGY. IN THE PAST 30 YEARS, THE RI HAS COMPLETED OVER 420 R&D PROJECTS; 13 OF WHICH WON STATE INVENTION AWARDS, 14 WON NATIONAL SCIENTIFIC CONVENTION AWARDS, 7 WON STATE S&T PROGRESS AWARDS, AND 130 WON MINISTERIAL-LEVEL S&T PROGRESS AWARDS. THE RI EMPLOYS OVER 1,200 STAFF AND WORKERS, HAS EIGHT RESEARCH LABORATORIES (LAB), TWO R&D AND PRODUCTION CENTERS, THREE TRIAL-MANUFACTURING WORKSHOPS, AND A CADRE SCHOOL.

C. MASI SPONSORS CHINA AVIATION EXPO 1991 IN BEIJING FROM 12 TO 19 OCT (CAN, 17 OCT; STD, 18 OCT). MORE THAN 105 DISPLAYS FROM CHINA AND 13 FOREIGN COUNTRIES WERE DISPLAYED AT THE BIENNIAL EXHIBITION. KEY EXHIBITORS INCLUDED MCDONNELL-DOUGLAS, BOEING, GENERAL ELECTRIC, BRITISH AEROSPACE, AIRBUS, AND AEROSPATIALE. HOWEVER, THE SOVIET UNION WAS CONSPICUOUSLY ABSENT, DESPITE ITS LARGE PRESENTATION AT THE 1989 EXPO.

D. U.S. PRATT & WHITNEY CORPORATION (CORP) ANNOUNCES PLANS TO TRANSFER V2500 ENGINE TECHNOLOGY TO CHINA (TKP, 26 OCT). CORP CHIEF EXECUTIVE JAMES KENNEDY ANNOUNCED THESE PLANS DURING A RECENT VISIT TO CHINA, AND ADDED THAT HE FELT THAT THE V2500 WOULD PLAY AN IMPORTANT ROLE IN CIVIL AVIATION DEVELOPMENT IN CHINA DURING THE NEXT DECADE. PRATT & WHITNEY IS CURRENTLY COOPERATING WITH THE CHENGDU AEROENGINE FACTORY ON PRODUCTION OF FT-8 GAS TURBINE ENGINES. (NOTE -- SEE ALSO 1-15 FEB 91 DSTI REPORT.)

E. MASI PUBLISHES 156-VOLUME "MISSILES AND SPACE BOOK SERIES" ON CHINA'S MISSILES AND SPACE TECHNOLOGY (CAN, 27 OCT). THE SERIES OF BOOKS PROVIDES EXTENSIVE DETAILS OF THE HISTORY OF CHINA'S AEROSPACE AND MISSILE DEVELOPMENT. THESE BOOKS INCLUDE DETAILS OF THE TECHNOLOGY FOR LIQUID-PROPELLANT BALLISTIC MISSILES, CARRIER ROCKETS, SOLID FUEL BALLISTIC MISSILES, AIR DEFENSE MISSILES, SATELLITE ENGINEERING, SOLID-PROPELLANT TECHNOLOGY, AND AERODYNAMICS.

6. SHIPBUILDING INDUSTRY

A. SHANGHAI PUDONG SHIPYARD LAUNCHES IMPROVED GUIDED MISSILE FRIGATE FOR PLA NAVY (NAVAL & MERCHANT SHIPS, 8 OCT). THIS "NEW GENERATION" GUIDED MISSILE FRIGATE, WHICH WAS LAUNCHED RECENTLY FROM HUDONG, HAS A REMOTE-CONTROL ENGINE ROOM, AUTOMATED COMMAND SYSTEMS AND GUNS, AND GUIDED MISSILES. IT IS FITTED WITH DOZENS OF THE LATEST WEAPONS AND MILITARY WARFARE SYSTEMS.

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(NOTE -- SEE ALSO 1-15 JUL 91 DSTI REPORT.)

B. CHINA MARITIME RESCUE AND SALVAGE CENTER GREATLY EXPANDS SALVAGE CAPABILITIES (NCNA, 13 OCT). THE CENTER HAS SET UP SUBORDINATE BUREAUS IN YANTAI, SHANGHAI, AND GUANGZHOU; AND SALVAGE STATIONS ARE LOCATED IN QINHUANGDAO, TIANJIN, RONGCHENG, YANTAI, LIANYUNGANG, LIGANG, SHANGHAI, WENZHO, FUZHOU, XIAMEN, SHANTOU, GUISHAN, GUANGZHOU, SHEKOU, BEIHAI, AND SANYA. THE CENTER OPERATES 40 ADVANCED 2,500 TON FLOATING CRANE SHIPS AND OVER 150 SPECIAL SALVAGE SHIPS. AMONG ITS MORE THAN 10,000 SALVAGE WORKERS ARE A NUMBER OF DIVING CREWS CAPABLE OF CONDUCTING 300 M DIVING OPERATIONS. THE CENTER HAS SALVAGED OVER 1,200 WRECKED VESSELS, 150 OF THESE OF FOREIGN OWNERSHIP, SINCE IT WAS SET UP 40 YEARS AGO. IT HOPES TO RAPIDLY EXPAND ITS ACTIVITIES IN THIS HIGHLY-PROFITABLE FIELD. (NOTE -- SEE ALSO 16-31 OCT 90 DSTI REPORT.)

C. PLA NAVY ARMAMENT AND TECHNOLOGY DEPT DEVELOPS 12 TYPES OF ADVANCED STEEL FOR CHINESE WARSHIPS (PD, 16 OCT). THE DEPT DEVELOPED THESE ADVANCED METALS WITH TECHNICAL ASSISTANCE FROM THE MINISTRY OF METALLURGY INDUSTRY. NOW, ALL PLA NAVY WARSHIPS ARE BUILT WITH THE NEW KINDS OF STEEL, WHICH HAVE WON MORE THAN 20 S&T PROGRESS AWARDS. (NOTE -- SEE ALSO 1-15 MAY 91 DSTI REPORT.)

D. SHANGHAI JIANGNAN SHIPYARD LAUNCHES SECOND 65,000 TON BULK FREIGHTER FOR GUANGZHOU OCEAN TRANSPORT CORP (CSN, 18 OCT). THIS SECOND "PANAMA-TYPE" BULK CARRIER, NAMED "LI SHAN HAI", WAS LAUNCHED FOR THE GUANGZHOU CORP ON 29 AUG. (NO FURTHER DATA; SEE ALSO 16-31 MAY 91 DSTI REPORT.)

E. GUANGZHOU SHIPYARD LAUNCHES 21,000 TON SUNDRY GOODS CARRIER FOR SHANGHAI OCEAN TRANSPORT CORP (TKP, 20 OCT). THE NEW VESSEL, NAMED "YONG AN GENG", WAS LAUNCHED ON 19 OCT. IT IS 174 M LONG, 25.6 M WIDE, AND HAS A CRUISING RANGE OF 15,000 NAUTICAL MILES. THIS IS THE FOURTH VESSEL BUILT BY THE GUANGZHOU SHIPYARD FOR THE SHANGHAI CORP. SINCE THE SHIPYARD INVESTED 30 MILLION YUAN IN EXPANDING ITS SHIP BUILDING CAPACITY TO 35,000 TON VESSELS, IT HAS RECEIVED ORDERS FOR TEN 35,000 TON AND THREE 21,000 TON VESSELS. (NOTE -- SEE ALSO 1-15 JUL 91 DSTI REPORT.)

F. CHINA STATE SHIPBUILDING CORP (CSSC) BUILDS 22,380 HORSEPOWER (HP) MARINE DIESEL ENGINE WITH SWISS TECHNOLOGY (PD, 22 OCT). CSSC'S DALIAN MARINE DIESEL ENGINE FACTORY IS COOPERATING WITH THE SWISS SULZER DIESEL ENGINE FACTORY IN BUILDING THESE ADVANCED MARINE ENGINES. THE FIRST 22,380 HP DIESEL ENGINE WILL BE COMPLETED IN 1992 AND THEN INSTALLED IN AN 80,000 TON

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BRAZILIAN FREIGHTER. THE DALIAN PLANT HAS ALREADY BUILT A 9,650 HP MARINE DIESEL ENGINE FOR SULZER, WHICH WAS INSTALLED IN A 30,000 TON GERMAN VESSEL. CSSC'S SHANGHAI SHIPYARD HAS ALSO BUILT A 9,650 HP DIESEL ENGINE FOR SULZER TO BE INSTALLED ON A SIMILAR GERMAN SHIP. SHANGHAI IS NOW BUILDING TWO 10,360 HP MARINE DIESEL ENGINES USING SULZER BLUEPRINTS. CSSC CLAIMS 60 TO 90 PERCENT OF THE COMPONENTS FOR THESE MASSIVE ENGINES ARE MADE IN CHINA. (NOTE -- SEE ALSO 16-31 MAY 91 DSTI REPORT.)

G. CSSC'S DALIAN SHIPYARD SIGNS CONTRACT TO BUILD 35,000 TON OIL TANKER FOR INDONESIA'S PERTAMINA CORP (NCNA, 24 OCT). INDONESIA WILL PAY USD 30 MILLION FOR AN OIL TANKER OF ADVANCED DESIGN AS WELL AS THE SHIPBUILDING TECHNOLOGY TO BUILD SIMILAR VESSELS IN INDONESIA. CHINESE ENGINEERS WILL GO TO INDONESIAN SHIPYARDS TO TRAIN LOCAL ENGINEERS ON HOW TO BUILD THEIR OWN VESSELS. THIS IS THE FIRST SHIP BUILDING CONTRACT SIGNED BETWEEN THE TWO COUNTRIES SINCE THEY RESTORED RELATIONS IN 1990.

7. MINISTRY OF MACHINE BUILDING/ELECTRONICS INDUSTRY (MMBEI)

A. UI MASI AEROSPACE BASE RI DEVELOPS "WS2400 SERIES CHASSIS" FOR HEAVY-DUTY FIELD TRUCKS (CHINA MACHINERY/ELECTRONICS JOURNAL - CMJE, 18 OCT). THE NEW CHASSIS IS DESIGNED TO CARRY LOADS UP TO 20 TONS AND CAN OPERATE IN DESERTS, MOUNTAINS, MARSHLANDS, AND UNDER EXTREME COLD WEATHER CONDITIONS. IT RECENTLY PASSED TECHNICAL APPRAISAL TESTS.

B. SHANGHAI XINNING AUTOMOTIVE REPAIR FACTORY DEVELOPS ELECTRIC POWER DRIVEN PASSENGER SEDAN (CMJE, 22 OCT). THE SEDAN, WHICH WAS DEVELOPED WITH THE ASSISTANCE OF THE SHANGHAI KELIAN ELECTRIC-POWER VEHICLE AND VESSELS COMPANY, CAN ACHIEVE SPEEDS OF 80 TO 100 KM/HOUR AND HAS A RANGE OF 80 TO 100 KM ON ONE BATTERY CHARGE. THE NEW VEHICLE WAS DISPLAYED AT THE RECENT SHANGHAI INTERNATIONAL ELECTROTECHNICAL EQUIPMENT AND TECHNOLOGY EXHIBITION.

C. DALIAN PASSENGER COACH FACTORY AND ZHONGXIN MACHINE BUILDING & ELECTRONICS COMPANY BUILD "JT6120 LUXURY BUSES" FOR EXPORT (STD, 25 OCT). DEVELOPMENT OF THE JT6120 WAS A KEY 7TH FYP PROJECT ACCOMPLISHED BY THE DALIAN FACTORY WITH ASSISTANCE FROM RI'S IN YANGZHOU AND CHANGSHE. THE AIR-COOLED COACH CAN ACHIEVE A MAXIMUM SPEED OF 120 KM/HOUR AND CAN CARRY 49 PASSENGERS. THE BUSES ARE NOW BEING ASSEMBLED BY THE ZHONGXIN COMPANY, LOCATED IN JIANGXIAN COUNTY IN SHANXI PROVINCE. ZHONGXIN WAS FORMERLY A BACKBONE DEFENSE INDUSTRY,

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PRODUCING TANKS AND OTHER MILITARY VEHICLES. THE FACTORY WILL PRODUCE 50 BUSES IN 1991, 500 IN 1992, AND HOPES TO REACH A PRODUCTION RATE OF 3,000 PER YEAR BY 1995. THE FACTORY IS NOW OPERATED BY THE CHINA INTERNATIONAL TRUST AND INVESTMENT CORP (CITIC). CITIC INVESTED 80 MILLION YUAN IN MODERNIZATION OF THE DEFENSE PLANT TO SATISFY AN URGENT NEED FOR BUSES IDENTIFIED BY THE MINISTRY OF COMMUNICATIONS. THE FIRST BUSES PRODUCED ARE BEING PURCHASED BY THE MINISTRY TO RELIEVE CONGESTION ON CHINA'S OVERBURDENED RAILWAY SYSTEM. THE JT6120 PASSED TECHNICAL APPRAISAL TESTS IN FEB 91. (NOTE -- SEE ALSO 16-31 MAR 91 DSTI REPORT.)

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D. MMBEI ANNOUNCES PLANS TO DOUBLE PRODUCTION OF PASSENGER SEDANS DURING 1992 (CD, 28 OCT). THE AUTOMOTIVE INDUSTRY EXPECTS TO PRODUCE 63,000 SEDANS DURING 1991; AND PLANS TO INCREASE PRODUCTION TO AT LEAST 120,000 DURING 1992. SEDANS WILL REPRESENT 20 PERCENT OF TOTAL AUTOMOTIVE VEHICLE PRODUCTION FOR 1992, WHICH IS SET AT 600,000. THE DOMESTIC DEMAND FOR SEDANS HAS EXCEEDED 100,000 DURING 1991, AND MMBEI HOPES TO MEET DEMAND DURING 1992 TO AVOID ANY NEED TO IMPORT SEDANS. THE INDUSTRY PLANS TO INCREASE ANNUAL PRODUCTION TO 240,000 SEDANS BY 1995, AND 600,000 BY THE YEAR 2000. PRICES ON LUXURY SEDANS MADE BY SINO-FOREIGN JOINT VENTURES (JV) ARE EXPECTED TO RISE SIGNIFICANTLY IN 1992. FOR EXAMPLE, SHANGHAI'S SANTANA SEDAN WILL SELL AT 190,000 YUAN FOR A BASIC MODEL, COMPARED WITH THE CURRENT PRICE OF 170,000 YUAN. (NOTE -- SEE ALSO 16-31 MAR 91 DSTI REPORT.)

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8. COMMUNICATIONS, COMMAND, AND CONTROL DEVELOPMENTS

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A. MINISTRY OF POSTS & TELECOMMUNICATIONS (MPT) INITIATES BELGIUM-SPONSORED "S1240 PROGRAM-CONTROLLED TELEPHONE PROJECT" IN LHASA (TIBET DAILY, 9 OCT). THE CEREMONY TO BEGIN WORK ON THIS 53 MILLION BELGIAN FRANCES PROJECT WAS HELD IN LHASA ON 8 OCT. THE NEW SYSTEM, WITH 5,000 GATES, WILL DOUBLE LHASA'S TELEPHONE COMMUNICATIONS CAPACITY AND IMPROVE THE CITY'S DOMESTIC AND LONG-DISTANCE TELEPHONE SERVICES.

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B. SSTC INAUGURATES KEYOU SINO-JAPANESE SOFTWARE DEVELOPMENT COMPANY IN BEIJING ON 15 OCT (STD, 16 OCT). THE EQUITY JV WAS INITIATED WITH A CAPITAL INVESTMENT OF 190 MILLION YUAN. THE COMPANY WILL PRIMARILY DEVELOP AND PRODUCE SOFTWARE FOR THE JAPANESE UNISYS CORP. PRODUCTION AT THE PLANT IS SCHEDULED TO BEGIN IN MAY 92.

C. STATE-RUN JIANGXI NUMBER 834 FACTORY DEVELOPS 2-TONE MULTIFREQUENCY ELECTRONIC MAGNETO TELEPHONE (CMEJ, 20 OCT). THIS SMALL, LIGHTWEIGHT PORTABLE TELEPHONE IS WATERPROOF, MOISTUREPROOF, AND HAS SECURITY PROTECTION AND ELECTROMAGNETIC COMPATIBILITY. THE TELEPHONE CAN BE

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INTEGRATED INTO CHINA'S 16-CHANNEL PROGRAM-CONTROLLED
FEEDLESS TELEPHONE EXCHANGES. IT WILL ALLOW
COMMUNICATIONS IN LOCATIONS WHERE NO ELECTRIC SUPPLY IS
AVAILABLE.

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D. MPT'S NUMBER 1 RI DEVELOPS "YCF121 BEEPER" AND
SATELLITE GROUND STATION HIGH POWER AMPLIFICATION
SYSTEMS (CD, 26 OCT; NCA, 29 OCT). THE NEW BEEPER,
DESIGNED FOR USE WITH 280-TYPE MICROCOMPUTERS, CAN
SERVICE 8,000 TO 30,000 SUBSCRIBERS. IT INITIALLY
ENTERED TRIAL PRODUCTION IN 1988, AND PASSED STATE-LEVEL
TECHNICAL APPRAISAL TESTS ON 24 OCT. IT WILL ENTER
FULL-SCALE PRODUCTION SOON. THE AMPLIFICATION SYSTEM IS
DESIGNED TO ELIMINATE THE NEED FOR STANDBY EQUIPMENT AT
SATELLITE GROUND STATIONS AND SHOULD CONSIDERABLY REDUCE
CONSTRUCTION COSTS. THE SYSTEM INCLUDES A RELIABLE
HIGH-POWER AMPLIFIER, STANDBY EQUIPMENT WITH AUTOMATIC
SWITCHING CAPABILITY, AND A SWITCHOVER SYSTEM. IT
PASSED MPT TECHNICAL APPRAISAL IN BEIJING ON 29 OCT.

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E. MPT SETS GOAL OF INCREASING MOBILE TELEPHONES IN
CHINA FROM 30,000 TO 150,000 BY END OF 8TH FYP PERIOD
(SCMP, 27 OCT). MPT SEES ADDITIONAL MOBILE PHONES AS A
WAY TO SUPPLEMENT CHINA'S BACKWARD TELEPHONE SYSTEM.
BEIJING ALREADY HAS OVER 6,000 MOBILE PHONES IN USE AND
LARGE QUANTITIES ARE FOUND IN MUNICIPAL AREAS OF FUJIAN
AND GUANGDONG PROVINCES. CURRENTLY, MOBILE PHONE USERS
IN CHINA PAY ABOUT 20,000 YUAN TO ACQUIRE A MOBILE
PHONE, AND THEN MUST PAY 1 YUAN PER MINUTE OF OUTGOING
AND INCOMING CALLS.

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F. MPT INITIATES CONSTRUCTION OF CHINA'S LONGEST
OPTICAL FIBER COMMUNICATIONS PROJECT BETWEEN SHANGHAI
AND GUANGZHOU (HONG KONG WEN WEI PO - WWP, 30 OCT).
THE 2,500 KM "NANYANHAI" COMMUNICATIONS CABLE, A KEY 8TH
FYP PROJECT, BEGAN CONSTRUCTION ON 29 OCT. THE LINE
WILL HAVE 24 CORES AND PROVIDE OVER 70,000 DIGITAL
CHANNELS. THE 400 MILLION YUAN PROJECT WILL PASS
THROUGH 59 CITIES AND COUNTIES ALONG CHINA'S EASTERN AND
SOUTHERN COASTS, INCLUDING THE XIAMEN, SHANTOU, AND
SHENZHEN SEZ'S. THE NEW OPTICAL FIBER LINE WILL BE
LINKED TO SIMILAR LINES BETWEEN NANJING AND WUHAN AND
NANJING AND SHANGHAI. (NOTE -- SEE ALSO 1-15 OCT 91
DSTI REPORT.)

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9. NUCLEAR/ELECTRIC POWER INDUSTRY

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A. GROWTH IN ELECTRIC POWER OUTPUT IN CHINA
OUTPACES NATIONAL ECONOMIC GROWTH (PD, 18 OCT).
CHINA'S TOTAL ELECTRIC POWER OUTPUT WILL EXCEED 670
BILLION KILOWATT (KW) - HOURS DURING 1991, AN INCREASE
OF 7.8 PERCENT OVER 1990. POWER GROWTH HAS EXCEEDED
GROWTH OF THE NATIONAL ECONOMY, WHICH SHOULD BE ABOUT 6

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PERCENT, FOR THE FIRST TIME IN CHINA'S HISTORY. DURING 1991, 60 LARGE POWER GENERATING FACILITIES WENT INTO OPERATION, INCREASING CHINA'S POWER PRODUCING CAPACITY BY 12,870,000 KW.

B. QINSHAN NUCLEAR REACTOR SAFETY SHELL PASSES APPRAISAL AS PHASE-2 ENVIRONMENTAL IMPACT STUDY IS COMPLETED (CD, 19 OCT; NCNA, 27 OCT). EXPERTS FROM THE NATIONAL NUCLEAR INDUSTRY CORP (NNIC), THE METALLURGICAL INDUSTRY, AND QINGHUA AND TONGJI UNIVERSITIES COMPLETED THEIR INSPECTION OF QINSHAN'S//GEOCOORDS: 3452N/11916E// REINFORCED CONCRETE PRESSURE VESSEL ON 18 OCT. THE STATION ALSO ANNOUNCED THAT IT HAD CORRECTED 193 OF 195 TECHNICAL PROBLEMS IDENTIFIED BY THE INTERNATIONAL ATOMIC ENERGY AGENCY DURING A RECENT VISIT. NNIC HAS ALSO ANNOUNCED COMPLETION OF THE ENVIRONMENTAL IMPACT STUDY FOR PHASE-2 CONSTRUCTION OF THE QINSHAN PLANT. SECOND PHASE CONSTRUCTION CALLS FOR INSTALLATION OF TWO 600,000 KW NUCLEAR REACTORS AT THE FACILITY DURING THE 8TH FYP PERIOD. THE STUDY CONSIDERED IMPACT OF THE REACTORS' OPERATION ON THE ENVIRONMENT WITHIN A 300 KM RADIUS OF THE QINSHAN FACILITY. (NOTE -- SEE ALSO 1-15 APR AND 1-15 MAY 91 DSTI REPORTS.)

C. SPC APPROVES PLAN TO BUILD 1.2 MILLION KW THERMAL POWER PLANT IN SHANGHAI'S PUDONG DZ (CD, 21 OCT). THE 3.15 BILLION YUAN PROJECT WILL BE CONSTRUCTED IN THE WAIGAOQIAO FREE TRADE ZONE WITHIN THE PUDONG AREA. FIRST PHASE CONSTRUCTION WILL INVOLVE INSTALLATION OF FOUR 300,000 KW THERMAL GENERATORS. 75 PERCENT OF THE FUNDS FOR THE PROJECT WILL BE PROVIDED BY THE CHINESE, WITH THE BALANCE PROVIDED BY TWO UI U.S. INVESTMENT COMPANIES.

D. SPC APPROVES PLANS TO BUILD A 1.8 MILLION KW PUMP STORAGE POWER STATION IN ZHEJIANG PROVINCE (CD, 23 OCT). CONSTRUCTION OF THE 2 BILLION YUAN PROJECT, LOCATED IN ANJI COUNTY //GEOCOORDS:3038N/11941E//, WILL BEGIN IN 1993. THE STATION WILL BE DESIGNED TO PUMP WATER INTO A RESERVOIR USING SURPLUS POWER GENERATED BY THE EAST CHINA GRID DURING SLACK POWER USAGE PERIODS. THE WATER WILL THEN BE AVAILABLE TO GENERATE RESERVE POWER DURING PEAK POWER USAGE PERIODS. FOREIGN TECHNOLOGY AND EQUIPMENT WILL BE INTRODUCED DURING CONSTRUCTION OF THE STATION.

E. FIRST PHASE CONSTRUCTION OF 250,000 KW THERMAL GENERATOR AT WENZHOU //GEOCOORDS: 2801N/12039E// POWER PLANT COMPLETED (CD, 28 OCT). SECOND PHASE CONSTRUCTION, WHICH WILL SOON BEGIN, CALLS FOR INSTALLATION OF A 600,000 KW THERMAL GENERATOR AT THE SITE. THE WENZHOU POWER PLANT WILL PROVIDE ELECTRICITY FOR THE LONGWAN //GEOCOORDS: 2803N/12109E// EXPORT

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INDUSTRIAL ZONE, WHICH IS NOW UNDER CONSTRUCTION.

10. MEDICAL SCIENCE

A. SURGEON AT PLA'S FOURTH UNIVERSITY OF MILITARY MEDICINE DEVELOPS NEW CHEMOTHERAPY FOR MALIGNANT TUMORS (NCNA, 16 OCT). DOCTOR ((LI)) ANDING OF THE UNIVERSITY'S XIJING HOSPITAL IN XIAN DEVELOPED THE NEW METHOD WHICH KILLS CANCER CELLS WITHOUT TOXIC SIDE EFFECTS. THE TECHNIQUE INVOLVES EMBEDDING A SILICON RUBBER BAG WITH ANTI-CANCER MEDICINES IN THE CAVITY CREATED WHEN A BRAIN TUMOR IS REMOVED. THE POTENCY OF THE MEDICINE IS RESTORED BY MONTHLY INJECTIONS. DOCTOR LI HAS CONDUCTED CLINICAL TESTS ON 43 BRAIN TUMOR PATIENTS SINCE 1989, WITH A 90 PERCENT RECOVERY RATE. DOCTOR LI, WHO IS ONLY 37 YEARS OLD, RECEIVED A MASTER'S DEGREE IN MEDICINE FROM THE UNIVERSITY IN 1986.

B. DOCTOR AT NANJING MR FUZHOU GENERAL HOSPITAL DEVELOPS "BRAIN STEREOSCOPE DIRECTION FINDER" (NCNA, 19 OCT). DOCTOR ((LIN)) XIAOWEN INVENTED THE NEW DEVICE TO TREAT CEREBRAL HEMORRHAGES, PARKINSON'S SYNDROME, AND OTHER BRAIN STEM DISEASES THAT WERE PREVIOUSLY THOUGHT TO BE INCURABLE. THE NEW TECHNIQUE HAS BEEN CLINICALLY TESTED IN MORE THAN 20 LARGE HOSPITALS THROUGHOUT CHINA WITH A 90 PERCENT SUCCESS RATE.

C. BEIJING HOSTS INTERNATIONAL CONVENTION ON TRADITIONAL MEDICINE IN INTERNATIONAL CONVENTION CENTER FROM 18-22 OCT (STD, 19 OCT). OVER 1,000 REPRESENTATIVES FROM 40 COUNTRIES ATTENDED THE MEETING ON DEVELOPMENT OF TRADITIONAL MEDICINES. SIX WORLD-FAMOUS SCHOLARS MADE REPORTS AND SPEECHES ON THE SUBJECT AND 557 PAPERS WERE EXCHANGED AT THE MEETING. HEALTH OFFICERS FROM 23 COUNTRIES DISCUSSED TRADITIONAL MEDICINE POLICIES. A DELEGATION FROM CHONGQING DISPLAYED A SERIES OF NEW REMEDIES FOR TREATMENT OF TUMORS, CATARACTS, GALL AND KIDNEY STONES, THROAT AILMENTS, AND VERTIGO. AN EXHIBITION OF S&T ACHIEVEMENTS IN INTERNAL MEDICINE WAS HELD IN CONJUNCTION WITH THE CONVENTION.

D. PD REPORTS SUCCESS OF CHINESE TRADITIONAL MEDICINE AND ACUPUNCTURE IN TREATING AIDS PATIENTS (19 OCT). CHINESE TRADITIONAL MEDICINE DOCTORS HAVE TREATED OVER 200 AIDS CASES SINCE 1988, USING TRADITIONAL AND WESTERN MEDICINE IN COMBINATION. AIDS PATIENTS TREATED HAVE SHOWN SIGNIFICANT IMPROVEMENTS, WITH THEIR CONDITIONS STABILIZED, APPETITES IMPROVED, AND MENTAL AND PHYSICAL STATES MARKEDLY STRENGTHENED. LYMPH GLANDS OF SOME PATIENTS HAVE BEGUN TO SHRINK IN SIZE AND SOME HAVE RETURNED TO WORK.

E. STUDENT FROM PLA'S THIRD UNIVERSITY OF MILITARY

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MEDICINE DEVELOPS "MODEL HIC-1 BIOACTIVE ORGANISM DYNAMIC TESTING MACHINE" (STD, 21 NOV). DOCTORAL CANDIDATE ((CHENG)) HAIPING (STC - 2052/3189/1627) DEVELOPED THIS DEVICE WHICH IS CAPABLE OF DYNAMIC TESTING OF BIOLOGICAL ORGANISMS IN VITRO. IT IS A MODERN MEDICAL INSTRUMENT FOR THE STUDY OF THE DYNAMICS OF BIOACTIVE ORGANISMS. THE MACHINE RECENTLY PASSED TECHNICAL APPRAISAL TESTS.

F. STD PRAISES SCIENTIFIC RESEARCH RESULTS OF CHENGDU MR'S KUNMING GENERAL HOSPITAL (23 OCT). THE HOSPITAL'S MEDICAL STAFF HAS DEMONSTRATED COLLECTIVE ACTIVISM AND CONSCIOUSNESS IN CREATING A VARIETY OF INVENTIONS FROM INTENSE SCIENTIFIC R&D. DURING THE 7TH FYF, THE HOSPITAL WON 237 PROVINCIAL S&T PROGRESS AWARDS, WITH 83 SPECIFICALLY COMMENDED BY COSTIND AND THE GENERAL LOGISTICS DEPT (GLD). (NOTE -- SEE ALSO 1-15 AND 16-30 SEP 91 DSTI REPORTS.)

G. CHINA ATOMIC ENERGY INDUSTRY COMPANY DEVELOPS APPARATUS FOR MEASURING HUMAN BODY ENERGY (STD, 24 OCT). THIS DIGITAL MEASURING DEVICE WAS DEVELOPED TO AID IN MEDICAL DIAGNOSIS AND TO PROVIDE SCIENTIFIC DATA ON THE ENERGY IN THE HUMAN BODY FOR ATHLETES. THE APPARATUS HAS ENTERED TRIAL PRODUCTION.

H. PLA'S FOURTH UNIVERSITY OF MILITARY MEDICINE DEVELOPS MULTI-INFORMATION HEART DETECTOR SYSTEM (STD, 28 OCT). THE NEW APPARATUS CAN PERFORM CONVENTIONAL CARDIOGRAMS AS WELL AS DETECTING ELECTROCARDIO ACTIVITY ON ALL ASPECTS OF THE HEART. THE SYSTEM PROVIDES COMPREHENSIVE PROCESSING OF PRECISE GRAPHICAL AND NUMERICAL DATA FOR DIAGNOSING CARDIOVASCULAR DISEASES. (NOTE -- SEE ALSO 16-30 SEP 91 DSTI REPORT.)

I. PLA MEDICAL QIGONG SYMPOSIUM HELD IN BEIJING RECENTLY (LAD, 28 OCT). MORE THAN 100 DISSERTATIONS PRESENTED AT THE SYMPOSIUM PROVIDED EVIDENCE OF GREAT QUANTITIES OF CLINICAL CASES AND DATA ON THE USE OF QIGONG IN MEDICAL TREATMENTS. THIS EVIDENCE PROVES THE TREMENDOUS POTENTIAL AND RANGE OF QIGONG AS A BRANCH OF MEDICAL SCIENCE WITH APPLICATIONS IN PHYSICAL FITNESS, TREATMENT OF ILLNESSES, AND DIRECT ASSISTANCE TO AIR FORCE, NAVY AND GROUND FORCE PERSONNEL COPING WITH COMPLEX ENVIRONMENTS AND STRENUOUS CONDITIONS.

J. CHENGDU MR GENERAL HOSPITAL REPORTS SUCCESS IN TREATING VENTRICULAR TACHYCARDIA BY CATHETER RADIO FREQUENCY EROSION (STD, 29 OCT). THE HOSPITAL CLINICALLY TESTED THE NEW TECHNIQUE ON A PATIENT SUFFERING VENTRICULAR TACHYCARDIA. AFTER 7 DAYS AND NIGHTS OF CONTINUOUS TREATMENT THE PATIENT'S IRREGULAR HEARTBEAT HAD TOTALLY DISAPPEARED.

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K. TWO MASI COMPANIES AND U.S. GENERAL ELECTRIC CORP SIGN 30-YEAR CONTRACT TO PRODUCE MEDICAL INSTRUMENTS (WMP, 29 OCT). THE CONTRACT BETWEEN THE U/I MASI ENTERPRISES AND THE U.S. CORP CALLS FOR ANNUAL PRODUCTION OF 50 EACH TOMOGRAPHIC SCANNERS AND ULTRASONIC SCANNERS AT CHINESE FACTORIES, WITH HALF OF THE DEVICES TO BE EXPORTED. THE TWO LOCAL COMPANIES HAVE EACH PROVIDED 20 PERCENT OF THE INVESTMENT WITH GENERAL ELECTRIC PROVIDING THE BALANCE.

L. MEDICAL SCHOOL TEACHING REFORM CONFERENCE HELD AT FOURTH UNIVERSITY OF MILITARY MEDICINE (LAD, 29 OCT). THE WEEK-LONG CONFERENCE WAS SPONSORED BY THE GLD HEALTH DEPT AND TOOK PLACE IN XIAN FROM 21 TO 26 OCT. MORE THAN 60 SCHOLARS ATTENDING THE MEETING SUMMED UP THEIR EXPERIENCES IN CARRYING OUT MEDICAL TEACHING REFORMS DURING THE 7TH FYP AND STUDIED WAYS TO FURTHER IMPROVE TEACHING METHODS DURING THE 8TH FYP PERIOD. DURING THE 7TH FYP PERIOD, SENIOR ARMY MEDICAL SCHOOLS TRAINED OVER 31,000 TECHNICAL CADRE FOR TROOP UNITS, INCLUDING OVER 2,600 POSTGRADUATE STUDENTS.

11. PLA SERVICES AND ARMS R&D ACHIEVEMENTS

A. PLA AIR FORCE NUMBER 7 FLIGHT ACADEMY DEVELOPS STEEL-PLATED RUNWAY FOR FIGHTER AIRCRAFT (LAD, 16 OCT). THE NEW-TYPE RUNWAY WAS RECENTLY CONSTRUCTED BY THE ACADEMY AT AN UI AIR FORCE BASE. IT COVERS AN AREA OF 9,000 M-SQUARE AND WAS APPRAISED AS MEETING REQUIRED AIR FORCE STANDARDS AFTER FLIGHT TESTING. (NO FURTHER DATA.)

B. SECOND ARTILLERY'S NUMBER 1 RI DEVELOPS GUIDED MISSILE ENVIRONMENTAL MONITORING VEHICLE (STD, 21 OCT). THE NEW VEHICLE HAS GREATLY IMPROVED MONITORING CAPABILITIES DUE TO ITS SOPHISTICATED EQUIPMENT AND COMPUTER CONTROL SYSTEMS. IT CAN QUICKLY AND EFFICIENTLY MONITOR ENVIRONMENTAL POLLUTION CAUSED BY STORAGE AND USE OF GUIDED MISSILES AND NUCLEAR WEAPONS. (NOTE -- SEE ALSO 1-15 OCT 91 DSTI REPORT.)

C. NATIONAL DEFENSE S&T UNIVERSITY DEVELOPS HIGH-SPEED, 3-DIMENSIONAL EXPERIMENTAL TOPOGRAPHIC SYSTEM (HUNAN DAILY, 25 OCT). THE UNIVERSITY TOOK 4 YEARS TO DEVELOP THE NEW SYSTEM, WHICH REPLACES TRADITIONAL SAND TABLES WITH AN "ELECTRONIC SAND TABLE". EXPERTS BELIEVE THE NEW METHOD WILL ACCELERATE MODERNIZATION IN THE FIELDS OF MILITARY COMMAND, SYSTEM SIMULATIONS, GEOLOGY, AND COMMUNICATIONS.

D. PLA ENGINEER CORPS TECHNICIAN DEVELOPS "INTELLIGENT SPEEDOMETER" (LAD, 28 OCT). ENGINEER ((XU)) YUQING (STC - 1776/3768/3237), UNDER THE GENERAL

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STAFF DEPT'S ENGINEER CORPS, DEVELOPED THE NEW SPEEDOMETER WITH ASSISTANCE FROM AN UI RI. THE DEVICE CAN CARRY OUT LINEAR AND ROTATIONAL SPEED CHECKS IN COMPLEX ENVIRONMENTS. IT IS SMALL, LIGHT WEIGHT, SENSITIVE, AND HAS APPLICATIONS IN A WIDE RANGE OF TEST SITUATIONS.

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E. STD COMMENTARY PROMOTES NEW GUIDELINES ON STEPS TOWARDS MODERNIZATION OF NAVAL EQUIPMENT (28 OCT). THE COMMENTARY NOTES THAT THE HIGH COST OF NAVAL EQUIPMENT AND LIMITATIONS ON INCREASES IN THE NAVAL BUDGET NECESSITATES NEW GUIDELINES ON NAVAL MODERNIZATION. THESE MUST INCLUDE "SHORTENING THE BATTLE LINE" (REDUCING THE NAVY'S SIZE), STRESSING KEY POINTS, AND STRENGTHENING THE QUALITY OF SCIENTIFIC R&D. THE NEW GUIDELINES ESTABLISH THE STRATEGIC ROLE OF S&T IN NAVY BUILDING WITH EMPHASIS ON FOUR PRINCIPALS -- (1) THE QUALITY OF S&T AS THE "PRIMARY PRODUCTION FORCE"; (2) PROMINENCE GIVEN TO S&T WORK BY LEADERSHIP CADRE; (3) BUILDING OF A CONTINGENT OF RED AND EXPERT S&T CADRE FOR THE NEXT CENTURY; AND (4) STRENGTHENING SCIENTIFIC MANAGEMENT AND REFORMING TECHNICAL ASPECTS OF NAVAL EQUIPMENT.

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12. DEFENSE CONFERENCES AND EXHIBITIONS
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A. 70TH SEMIANNUAL GUANGZHOU EXPORT TRADE FAIR HELD FROM 15 TO 30 OCT (SCMP, 12 & 15 OCT; CD, 15 & 31 OCT). 45,400 GUESTS FROM 129 COUNTRIES AND REGIONS CONDUCTED USD 6.073 BILLION IN TRANSACTIONS DURING THE 15-DAY EXHIBITION. THE TRANSACTION TOTAL EXCEEDED THE USD 5.7 BILLION AT THE FALL 90 FAIR AND USD 5.74 BILLION AT THE SPRING 91 FAIR. 25,000 OF THE GUESTS CAME FROM HONG KONG, 4,000 FROM TAIWAN, AND ABOUT 3,000 EACH FROM THE U.S. AND JAPAN. 16 OF CHINA'S NEW ECONOMIC AND TECHNOLOGY ZONES FROM EASTERN AND SOUTHERN COASTAL REGIONS PARTICIPATED IN THE FAIR FOR THE FIRST TIME. THEY RAN A SERIES OF PROMOTIONS DURING THE EVENT TO ATTRACT ADDITIONAL FOREIGN INVESTMENT. FAIR ACTIVITIES WERE SOMEWHAT OVERSHADOWED BY THE ONGOING SINO-U.S. TRADE DISPUTE.

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B. FIRST CHINA INTERNATIONAL ELECTRONICS EXHIBITION HELD IN BEIJING FROM 16 TO 21 OCT (TKP, 17 OCT; PD, 18 OCT). 80 MAJOR FOREIGN ELECTRONIC COMPANIES FROM 14 COUNTRIES AND REGIONS JOINED OVER 400 CHINESE ENTERPRISES IN PARTICIPATING IN THE SHOW. THE EXHIBITION, WHICH WAS SPONSORED BY THE CHINA NATIONAL ELECTRONICS IMPORT/EXPORT CORP, CONCLUDED CONTRACTS TO EXPORT USD 30 MILLION IN CHINESE PRODUCTS AND IMPORT USD 10 MILLION IN FOREIGN TECHNOLOGY.

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C. SSC APPROVES PLANS TO HOLD CHINA NEW PRODUCTS

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AND NEW TECHNOLOGY EXPOSITION FROM 4 TO 12 APR 92 (STD, 19 OCT). THE EXHIBITION, TO BE HELD IN THE BEIJING EXHIBITION HALL, WILL BE COSPONSORED BY STD, THE STATE BUREAU OF PATENTS, AND THE BEIJING ZHONGHAI EXHIBITION COMPANY.

D. BEIJING POLYTECHNICAL UNIVERSITY HOSTS INTERNATIONAL PYROTECHNICS AND EXPLOSIVES SYNTHESIZATION CONFERENCE (STD, 29 OCT). 200 SCHOLARS AND SPECIALISTS ATTENDING THE CONFERENCE LEARNED THAT CHINA HAD RECENTLY DEVELOPED A SPECIAL COMPOSITE DYNAMITE FOR CIVILIAN USE, WHICH WILL SOON ENTER FULL PRODUCTION. CHINA HAS RECEIVED WORLD RECOGNITION FOR ITS EXPERIMENTS IN "BURN-TO-EXPLOSION" AND "CONCUSSION-TO-EXPLOSION" PHENOMENA, AS WELL AS ITS EFFORTS AT NUMERICAL SIMULATION.

E. HONG KONG ADSALE EXHIBITION SERVICES COMPANY ANNOUNCES PRC S&T EXHIBITIONS SCHEDULED FOR 1992 (ADSALE BROCHURE, UNDATED). THE HONG KONG COMPANY WILL PROMOTE A NUMBER OF EXHIBITIONS IN THE CHINA INTERNATIONAL EXHIBITION CENTER IN BEIJING DURING 1992, INCLUDING THE FOLLOWING KEY S&T RELATED SHOWS -- (1) FOURTH INTERNATIONAL ENERGY & POWER EXHIBITION, 19-24 MAY 92. THE SHOW WILL BE SPONSORED BY THE CHINA ELECTRICITY COUNCIL AND THE CHINA COUNCIL FOR PROMOTION OF INTERNATIONAL TRADE (CCPIT). (2) BEIJING INTERNATIONAL AUTOMOTIVE INDUSTRY EXHIBITION, 25-30 JUN 92. THE FAIR WILL BE SPONSORED BY CCPIT AND THE CHINA NATIONAL AUTOMOTIVE INDUSTRY CORP. (3) FOURTH INTERNATIONAL MINING EQUIPMENT EXHIBITION, 22-27 SEP 92. THE FAIR WILL BE SPONSORED BY CCPIT, THE METALLURGICAL AND NONFERROUS METALS INDUSTRIES, AND THE CHINA NATIONAL COAL CORP.

13. DSTI AWARDS AND RECOGNITION

A. STATE COUNCIL AND CENTRAL MILITARY COMMISSION CONFER TITLE ON REKNOWN SCIENTIST ((QIAN)) XUESEN (PD, 19 OCT). DOCTOR QIAN RECEIVED THE HONORIFIC TITLE "STATE SCIENTIST WHO HAS MADE OUTSTANDING CONTRIBUTIONS" FOR HIS GREAT ACHIEVEMENTS IN CHINA'S S&T DEVELOPMENT. DURING A CEREMONY HELD IN BEIJING ON 16 OCT, COSTIND DIRECTOR ((DING)) HENGGAO OFFICIALLY CONFERRED THE TITLE ON QIAN. ON 19 OCT, COSTIND'S POLITICAL DEPT ISSUED A CIRCULAR CALLING ON ALL NATIONAL DEFENSE TEST BASES, RI'S, ACADEMIES AND SCHOOLS TO FOLLOW THE EXAMPLE SET BY DOCTOR QIAN.

B. HUBEI DAILY PROFILES DEPUTY CHIEF ENGINEER IN PROVINCIAL METEOROLOGICAL BUREAU (28 OCT). ((JIN)) HONGXIANG (STG - 6855/7703/4382) WAS ONE OF 206 SCIENTISTS COMMENDED AT THE NATIONAL 7TH FYP CITATION MEETING HELD IN SEP. THE 57-YEAR-OLD SCIENTIST IS

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CREDITED WITH PLAYING A LEADING ROLE IN DEVELOPING THREE WEATHER PREDICTION SYSTEMS, "THE MYWNS, MWSS, AND MDS.WDS" (AS PRINTED IN CHINESE TEXT). THE THREE SYSTEMS WERE INSTRUMENTAL IN GUIDING LOCAL LEADERS IN COMBATING DEVASTATING FLOODS THAT STRUCK LARGE PARTS OF CHINA DURING THE SUMMER 1992. U.S. AND FRENCH SCIENTISTS INVITED JIN HONGXIANG TO ATTEND THE 25TH INTERNATIONAL RADAR METEOROLOGICAL CONFERENCE, HELD IN PARIS IN JUN 91, DURING WHICH HE WAS OFFICIALLY RECOGNIZED FOR HIS DEVELOPMENT OF THE MYWMS SYSTEM. (NOTE -- SEE ALSO 1-15 SEP 91 DSTI REPORT.)

C. PPSN HIGHLIGHTS S&T ACCOMPLISHMENTS OF PUBLIC SECURITY (PS) TECHNICAL PERSONNEL DURING 1980'S DECADE (29 OCT). PPSN CLAIMS THAT THE MORE THAN 60,000 TECHNICAL PERSONNEL INVOLVED PS S&T HAVE ACCOMPLISHED THE FOLLOWING DEVELOPMENTS IN THE PAST DECADE -- (1) AN MPS COMMUNICATIONS AND COMMAND OPERATIONS NETWORK THAT REACHES 97 PERCENT OF CHINA'S CITIES AND 94 PERCENT OF COUNTY PS ORGANS; (2) COMPLETION OF PHASE 1 AND 2 OF A PS INFORMATION SYSTEM NETWORK, WITH PHASE 3 UNDER WAY; (3) ISSUANCE OF IDENTIFICATION CARDS TO OVER 80 MILLION PEOPLE; (4) A HIGH DEGREE OF EFFICIENCY ACHIEVED IN CRIMINAL INVESTIGATION TECHNIQUES; (5) DEVELOPMENT OF NEW SAFETY DEFENSE TECHNIQUES; (6) A NEW FIRE-FIGHTING SYSTEM EMPLOYING ADVANCED FIRE-FIGHTING SKILLS; AND (7) GREAT PROGRESS IN THE FIELD OF COMMUNICATIONS MANAGEMENT.

COMMENTS: 1. (SOURCE COMMENTS) PROMINENT CHINESE ECONOMISTS HAVE BEEN OPENLY CRITICAL OF THE 12 REFORM MEASURES ENACTED DURING THE RECENT COMMUNIST PARTY MEETING TO DECIDE HOW TO REINVIGORATE CHINA'S LOSS-MAKING STATE ENTERPRISES (SEE PARA 3A OF SUBJECT REPORT). RESEARCHERS FROM THE CHINESE ACADEMY OF SOCIAL SCIENCES HAVE WARNED THAT THE REFORM MEASURES, WHICH PRIMARILY INVOLVE RENEWED CALLS FOR STATE-RUN ENTERPRISES TO RENOVATE THEIR PRODUCTION LINES AND PRODUCT MIX AND IMPROVE THEIR MANAGEMENT, WILL HAVE NO PRACTICAL EFFECT IF THESE ENTERPRISES ARE NOT GIVEN MANAGEMENT AUTONOMY AND ENCOURAGED TO IMPORT FOREIGN PRODUCTION TECHNOLOGY AND REFORM THEIR MANAGEMENT. THE ECONOMISTS ARE MOST CONCERNED BECAUSE THE PARTY CONTINUES TO MEASURE ENTERPRISE SUCCESS BASED ON PRODUCTION OUTPUT RATHER THAN PROFITS EARNED AND TAXES PAID. BECAUSE STATE INDUSTRIES ARE ALLOWED TO CONTINUE TO PRODUCE HUGE QUANTITIES OF OBSOLETE UNWANTED GOODS, THE CAMPAIGN TO MAKE 1991 THE "YEAR OF EFFICIENCY, QUALITY, AND VARIETY" HAS FAILED COMPLETELY. INDUSTRY LEADERS HAVE NOT PRESSED FOR IMPROVED QUALITY PRODUCTS OR A REVITALIZED PRODUCT MIX; IN FACT THEY HAVE CONTINUED TO BRAG ABOUT RECENT GROWTH IN TOTAL OUTPUT VALUE WHILE NATIONAL STOCKPILES HAVE ALSO CONTINUED TO

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GROW AT AN ALARMING RATE.

2. THE STRATEGIC MISSILE FORCE SEEMS TO HAVE DEVELOPED A MEASURE OF SENSITIVITY ABOUT THE LEVEL OF POLLUTION ITS MISSILE AND NUCLEAR WARHEAD SITES MAY BE CAUSING TO THEIR IMMEDIATE ENVIRONMENTS. THE SECOND ARTILLERY HAS REPORTED DEVELOPMENT OF A NEW ENVIRONMENTAL MONITORING VEHICLE WHICH CAN QUICKLY DETECT AND EVALUATE POLLUTION CAUSED IN THE STORAGE AND EMPLOYMENT OF STRATEGIC MISSILES AND NUCLEAR WEAPONS (PARA 11B). THE 1-15 OCT 91 DSTI REPORT CONTAINS AN ITEM (PARA 11F) ON THE DEVELOPMENT OF A PURIFIER TO BE ATTACHED TO LIQUID PROPELLANT TANKERS ADDING FUEL TO STRATEGIC ROCKETS STORED IN MISSILE SILOS. THE PURIFIER WAS DEVELOPED TO INCREASE SAFETY TO CREWS INVOLVED IN SERVICING THE MISSILES AND TO REDUCE POLLUTION AROUND THE SITES. USUALLY SUCH DEVELOPMENTS ARE INSPIRED BY SERIOUS ACCIDENTS AT THE SITES LEADING TO SIGNIFICANT LOSS OF LIFE OR PERSONNEL INJURIES. HOWEVER, NO SUCH ACCIDENTS HAVE BEEN REPORTED IN RECENT YEARS.

3. AN STD COMMENTARY ON NAVAL MODERNIZATION HAS INTIMATED THAT THE PLA NAVY WILL UNDERGO A REORGANIZATION TO "SHORTEN THE BATTLE LINE" (PARA 11E). THIS IMPLIES THAT THE SIZE OF THE FORCE WILL BE REDUCED TO FACILITATE MODERNIZATION OF THE REMAINING COMPONENTS. THERE HAVE BEEN RUMORS OVER THE PAST 3 YEARS THAT THE PLA WILL UNDERGO A 600,000 TO 750,000 MAN CUT FROM ITS CURRENT 3.2 MILLION STRENGTH TO RELEASE ADDITIONAL FUNDS FOR FORCE MODERNIZATION. SINCE THE NAVY'S STRENGTH IS ALREADY LESS THAN 500,000, THE CUTS IN PERSONNEL CANNOT BE GREAT; HOWEVER, THE NAVY COULD AFFORD TO GIVE UP A LARGE NUMBER OF ITS OBSOLETE "BROWN WATER" ELEMENTS SUCH AS PATROL BOATS AND CONVENTIONAL SUBMARINES. THE NAVY HAS ALWAYS PLAYED A VANGUARD ROLE IN WEAPONS AND EQUIPMENT MODERNIZATION AND WILL CONTINUE TO MAINTAIN ITS POSITION BY MOST EFFICIENT USE OF THE FUNDS AND RESOURCES ALLOCATED TO IT.

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